Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1   1.   (previously presented): A system for generating a two-dimensional
2   spatial arrangement of a cluster rendering, comprising:
3   clusters stored in a storage to represent concepts and terms extracted from
4   a set of documents;
5   a set of the stored clusters selected with each selected cluster sharing a
6   common theme comprising one or more of the extracted concepts and terms that
7   are shared; and
8   a placement module to place the set of the stored clusters into a grouping,
9   comprising:
10   an anchor point selector submodule to choose one of the selected
11   clusters and to determine an anchor point on the chosen cluster that is located on
12   an open edge of the chosen cluster along a vector defined from a center of the
13   chosen cluster, wherein the vector intersects the anchor point; and
14   a cluster placement submodule to place a center of a further
15   selected cluster outside of the anchor point on the vector and to limit overlap of
16   the chosen cluster and the further selected cluster; and
17   an arrangement submodule to arrange one or more of the
18   remaining selected clusters into an arrangement of clusters that each have a center
19   originating outside of the anchor point and on the vector; and
20   a display and visualization module to display the grouping via a display.

1   2.   (previously presented): A system according to Claim 1, further
2   comprising:
3   a sort module to sort the selected clusters in the set of the stored clusters
4   by cluster size.

1   Claim 3 (canceled).

1   Claim 4 (canceled).

1   5.   (previously presented): A system according to Claim 1, further

2 comprising:

3   an angle submodule to define the vector at a normalized angle.

1   Claim 6 (canceled).

1   Claim 7 (canceled).

1   8.   (previously presented): A system according to Claim 1, further

2 comprising:

3   a rendering module to render each selected cluster as a circle having an

4 independent radius.

1   9.   (previously presented): A system according to Claim 8, wherein

2 each circle has a volume dependent on a number of concepts contained in the

3 selected cluster.

1   10.   (previously presented): A system according to Claim 1, further

2 comprising:

3   a rendering module to render each selected cluster as a convex volume,

4 wherein each convex shape represents visualized data for a semantic concept

5 space.

1   11.   (previously presented): A system according to Claim 1, wherein

2 the placement module determines a further anchor point located on another open

3 edge of the chosen cluster where a center of a further selected cluster is placed

4 outside the further anchor point on a further vector and limits overlap of the

5 chosen cluster and the further selected cluster, further comprising:

6   a grafting submodule arranging one or more of the remaining selected

7   clusters into an additional arrangement of clusters that each have a center

8   originating outside of the further anchor point and on the further vector.

1   Claim 12 (canceled).

1   Claim 13 (canceled).

1   14.   (previously presented): A method for generating a two-

2   dimensional spatial arrangement of a cluster rendering, comprising:

3   storing clusters in a storage to represent concepts and terms extracted from

4   a set of documents;

5   selecting a set of the clusters with each selected cluster sharing a common

6   theme comprising one or more of the extracted concepts and terms that are

7   shared; and

8   placing the set of the stored clusters into a grouping, comprising:

9   choosing one of the selected clusters and determining an anchor

10   point on the chosen cluster that is located on an open edge of the chosen cluster

11   along a vector defined from a center of the chosen cluster, wherein the vector

12   intersects the anchor point; and

13   placing a center of a further selected cluster outside of the anchor

14   point on the vector and limiting overlap of the chosen cluster and the further

15   selected cluster; and

16   arranging one or more of the remaining selected clusters into an

17   arrangement of clusters that each have a center originating outside of the anchor

18   point and on the vector; and

19   displaying the grouping via a display.

1   15.   (previously presented): A method according to Claim 14, further

2   comprising:

3   sorting the selected clusters in the set of the stored clusters by cluster size.

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1   Claim 16 (canceled).

1   Claim 17 (canceled).

1   18.   (previously presented): A method according to Claim 14, further
2 comprising:
3   defining the vector at a normalized angle.

1   Claim 19 (canceled).

1   Claim 20 (canceled).

1   21.   (previously presented): A method according to Claim 14, further
2 comprising:
3   rendering each selected cluster as a circle having an independent radius.

1   22.   (previously presented): A method according to Claim 21, further
2 comprising:
3   calculating a volume for each circle dependent on a number of concepts
4 contained in the selected cluster.

1   23.   (previously presented): A method according to Claim 14, further
2 comprising:
3   rendering each cluster as a convex volume, wherein each convex shape
4 represents visualized data for a semantic concept space.

1   24.   (previously presented): A method according to Claim 14, further
2 comprising:
3   determining a further anchor point located on another open edge of the
4 chosen cluster where a center of a further selected cluster is placed outside the
5 further anchor point on a further vector and limiting overlap of the chosen cluster
6 and the further selected cluster; and

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7   arranging one or more of the remaining selected clusters into an additional

8   arrangement of clusters that each have a center originating outside of the further

9   anchor point and on the further vector.

1   Claim 25 (canceled).

1   Claim 26 (canceled).

1   27.   (previously presented): A computer-readable storage medium

2   storing code for causing a computer to perform the method according to Claims

3   14, 15, 18, 21, 23, and 24.

1   28.   (previously presented): A system for arranging concept clusters in

2   thematic relationship in a two-dimensional visual display area, comprising:

3   a stored theme to logically represent one or more concepts based on terms

4   extracted from a document set;

5   a plurality of clusters selected to represent a multi-dimensional

6   visualization space stored as clusters in a storage, wherein each selected cluster

7   comprises at least one of the concepts in one such theme that is in common with

8   the other selected clusters; and

9   a placement module to place the clusters into a grouping, comprising:

10   a listing submodule to combine in order each ungrouped cluster

11   from the selected clusters for the shared common theme into a list of placeable

12   clusters;

13   a grouping submodule to add each placeable clusters list into [[a]]

14   the grouping with one or more other placeable clusters lists, wherein the clusters

15   in the other placeable clusters lists each comprise at least one concept in the

16   shared common theme;

17   an anchor submodule to choose a selected cluster and to determine

18   an anchor point on the chosen cluster that is located on an open edge of the

19   chosen cluster along a vector defined from a center of the chosen cluster, wherein

20   the vector intersects the anchor point; and

21   a cluster placement submodule to place a center of a further

22   selected cluster outside of the anchor point on the vector and to limit overlap of

23   the chosen cluster and the further selected cluster; and

24   a grafting submodule to place the center of a selected cluster and to

25   graft the clusters in the remaining placeable clusters lists in the grouping outside

26   the anchor point and along the vector; and

27   a display and visualization module to display the clusters via a display.

1   29.   (previously presented): A system according to Claim 28, further

2   comprising:

3   a sort module sorting the clusters in each placeable clusters list in

4   sequence.

1   30.   (original): A system according to Claim 29, wherein the sequence

2   comprises a number of documents containing the one or more logically

3   represented concepts.

1   31.   (original): A system according to Claim 29, wherein the sequence

2   comprises one of ascending and descending order.

1   32.   (original): A system according to Claim 28, wherein each cluster is

2   formed as one of a circular and non-circular convex volume.

1   33.   (previously presented): A system according to Claim 28, wherein

2   the vector is defined at normalized angles.

1   Claim 34 (canceled).

1   35.   (previously presented): A system according to Claim 28, wherein

2   the shared common theme contains concepts within a pre-specified range of

3   variance.

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1   36.   (previously presented): A method for arranging concept clusters in

2   thematic relationship in a two-dimensional visual display area, comprising:

3   logically representing one or more concepts based on terms extracted from

4   a document set as a theme;

5   selecting clusters representing a multi-dimensional visualization space

6   stored as clusters in a storage, wherein each selected cluster comprises at least one

7   of the concepts in one such theme that is in common with the other selected

8   clusters; and

9   placing the clusters into a grouping, comprising:

10   combining in order each ungrouped cluster from the selected

11   clusters for the shared common theme into a list of placeable clusters;

12   adding each placeable clusters list into the grouping with one or

13   more other placeable clusters lists, wherein the clusters in the other placeable

14   clusters lists each comprise at least one concept in the shared common theme;

15   choosing a selected cluster and determining an anchor point on the

16   chosen cluster that is located on an open edge of the chosen cluster along a vector

17   defined from a center of the chosen cluster, wherein the vector intersects the

18   anchor point; and

19   placing a center of a further selected cluster outside of the anchor

20   point on the vector and limiting overlap of the chosen cluster and the further

21   selected cluster; and

22   placing the center of a selected cluster and grafting the clusters in

23   the remaining placeable clusters lists in the grouping outside the anchor point

24   along the vector; and

25   displaying the grouping via a display.

1   37.   (previously presented): A method according to Claim 36, further

2   comprising:

3   sorting the clusters in each placeable clusters list in sequence.

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1 38. (original): A method according to Claim 37, wherein the sequence

2 comprises a number of documents containing the one or more logically

3 represented concepts.

1 39. (original): A method according to Claim 37, wherein the sequence

2 comprises one of ascending and descending order.

1 40. (original): A method according to Claim 36, further comprising:

2 forming each cluster as one of a circular and non-circular convex volume.

1 41. (previously presented): A method according to Claim 36, further

2 comprising:

3 defining the vector at normalized angles.

1 Claim 42 (canceled).

1 43. (previously presented): A method according to Claim 36, wherein

2 the shared common theme contains concepts within a pre-specified range of

3 variance.

1 44. (previously presented): A computer-readable storage medium

2 storing code for causing a computer to perform the method according to Claims

3 36, 37, 38, 39, 40, 41, and 43.

1 45. (previously presented): A system according to Claim 1, wherein

2 the common theme is defined by selecting the shared extracted terms to have

3 common semantic meanings.

1 46. (currently amended): A system according to Claim 1, wherein at

2 least one additional set of the stored clusters are selected with each selected

3 additional cluster sharing a further common theme comprising one or more of the

4 extracted terms that are shared, wherein the further common theme is different

5 than the common theme; and the at least one additional set of the stored clusters is

6 placed into the grouping.

1 47. (currently amended): A system according to Claim 1, wherein at

2 least one additional cluster is selected comprising the extracted terms that are

3 unique from each other cluster; and the at least one additional cluster is placed

4 into the grouping.

1 Claim 48 (canceled).

1 49. (previously presented): A method according to Claim 14, further

2 comprising:

3 defining the common theme by selecting the shared extracted terms to

4 have common semantic meanings.

1 50. (currently amended): A method according to Claim 14, further

2 comprising:

3 selecting at least one additional set of the stored clusters with each

4 selected additional cluster sharing a further common theme comprising one or

5 more of the extracted terms that are shared, wherein the further common theme is

6 different than the common theme; and

7 placing the at least one additional set of the stored clusters into the

8 grouping.

1 51. (currently amended): A method according to Claim 14, further

2 comprising:

3 selecting at least one additional cluster comprising the extracted terms that

4 are unique from each other cluster; and

5 placing the at least one additional cluster into the grouping.

1 Claim 52 (canceled).

1   53.   (currently amended): A system according to Claim 28, wherein at

2 least one additional [[set]] plurality of the clusters is selected, wherein each

3 selected additional cluster comprises one or more of the extracted terms that is in

4 common with the other selected clusters in a further common theme that is

5 different than the shared common theme; and the at least one additional [[set]]

6 plurality of the stored clusters is placed into the grouping.

1   54.   (currently amended): A system according to Claim 28, wherein at

2 least one additional cluster is selected that comprises the extracted terms that are

3 unique from each other cluster; and the at least one additional cluster is placed

4 into the grouping.

1   55.   (currently amended): A method according to Claim 36, further

2 comprising:

3   selecting at least one additional set of the clusters, wherein each selected

4 additional cluster comprises one or more of the extracted terms that is in common

5 with the other selected clusters in a further common theme that is different than

6 the shared common theme; and

7   placing the at least one additional set of the stored clusters into the

8 grouping.

1   56.   (currently amended): A method according to Claim 36, further

2 comprising:

3   selecting at least one additional cluster comprising the extracted terms that

4 are unique from each other cluster; and

5   placing the at least one additional cluster into the grouping.